60	beveled edge
61	vortex induced vibration suppression device
62	body
63	bore
64	end portion
65	end portion
66	helical vane
67	helical vane
68	helical vane
69	thin wall section
70	slot
71	mating surface
72	mating surface
73	inside surface
74	band
75	buckle
76	technician
77	technician
78	opening
79	opening
80	opening
81	tensioning tool
82	outer surface
83	pipeline section
84	outer surface
85	arrow
88	roller

The foregoing embodiments are presented by way of example only; the scope of the present invention is to be limited only by the following claims.

CLAIMS

1. A vortex induced vibration suppression apparatus

comprising;

a) an elongated one piece body of flexible polymeric material, the body having a wall surrounding a continuous, open ended bore;

b) a plurality of helical vanes on the body wall and extending along the length thereof;

c) A longitudinally extending slot that enables the body wall to be pulled apart at first and second longitudinally extending edges;

d) a pipe section that carries the body, the riser pipe occupying the bore;

e) a plurality of transverse openings in the vanes that are positioned at circumferentially spaced positions of the wall; and

f) a tensionable strap that can be removably applied to the body for holding the body to the pipe section, wherein the strap follows an annular path that extends through a single opening of each of the vanes.

2. The vortex induced vibration suppression apparatus of claim 1 further comprising a longitudinal slot that extends through the wall, enabling the body to be separated to afford access to the bore.

3. The vortex induced vibration suppression apparatus of claim 2 wherein the slot extends longitudinally in between two of the vanes.

4. The vortex induced vibration suppression apparatus of claim 2 wherein the slot is a helically shaped slot.

5. The vortex induced vibration suppression apparatus of claim 2 wherein there are a plurality of said straps that hold the body to the pipe section at spaced apart longitudinal intervals.

6. The vortex induced vibration suppression apparatus of claim 1 wherein the body is of a polyurethane material.

7. The vortex induced vibration suppression apparatus of claim 1 wherein the body is between 50 and 95 Shore A durometer.

8. The vortex induced vibration suppression apparatus of claim 1 wherein the body is between 50 and 75 Shore D durometer.

9. The vortex induced vibration suppression apparatus of claim 5 wherein each strap is a removable, connectable member.

10. The vortex induced vibration suppression apparatus of claim 1 wherein the slot tracks a helical path that coincides generally with a path tracked by each vane.

11. The vortex induced vibration suppression apparatus of claim 10 wherein there is a removable connection that holds the vane sections together at the slot.

12. A vortex induced vibration suppression apparatus comprising;

a) an elongated body of flexible polymeric material, the body having a wall surrounding a continuous, open ended bore;

b) a plurality of helical vanes on the body extending along the length thereof;

c) a longitudinal slot that extends through the wall, enabling the body to be separated at two provided wall edges to afford access to the bore;

d) A plurality of openings through the vanes, said openings being spaced apart longitudinally on each vane and generally aligned transversely in multiples, each of said multiples on a different vane; and

e) straps that extend through the openings and hold the body wall edges together on a pipe section.

13. A method of installing a pipeline having vortex induced suppression devices thereon, comprising the steps of:

a) mounting one or more polymeric vortex induced vibration suppression device on a joint of pipe to be part of the pipeline;

b) making up the pipeline on a pipeline lay barge having a stinger;

c) Wherein before step "d" each suppression device is attached to the pipeline with straps that each completely encircle the suppression device and that each extend through openings in the vanes;

d) lowering the riser and its vortex induced vibration suppression devices to the seabed by passing the riser and vortex induced vibration suppression devices over a stinger part of the barge.

14. A method of placing a pipeline section in an offshore marine environment, comprising the steps of:

a) providing a pipe laying barge that enables several pipe joints to be connected together end to end to form a pipeline, the pipe laying barge having a stinger that supports the pipe when the pipeline assumes a curved shape as it is lowered from the barge toward the seabed;

b) welding several joints of pipe together on the barge;

c) lowering the pipeline section from the barge to the seabed, wherein the stinger supports the pipeline section as it leaves the barge to enter the water;

d) placing one or more polymeric vortex induced vibration suppression devices on the pipeline section before it is lowered to the seabed from the barge each suppression device having a wall that has a longitudinal slot wall edge at the slot, multiple helical vanes, and multiple openings through the vanes at spaced apart locations;

e) Securing the suppression devices to the pipeline

using tensile fasteners that encircle the suppression device and pass through multiple of the openings; and

f) wherein in step "d" the vortex induced vibration suppression device passes over the stinger.

15. The method of claim 14 further comprising the step of widening the slot during placement of the device on the pipeline section.

16. The method of claim 15 wherein the vortex induced suppression vibration devices are joined to the pipeline section in step "d" using multiple tensile fasteners for ech device.

17. The method of claim 15 wherein the vortex induced vibration device is of a flexible material, and step "d" includes flexing the flexible material to widen the slot.

18. The method of claim 15 wherein the vortex induced vibration device is of a polymeric material, and step "d" includes flexing the polymeric material to widen the slot.

19. The method of claim 15 wherein the vortex induced vibration device is of a polyurethane material, and step "d" includes flexing the polyurethane material to widen the slot.

20. The method of claim 17 wherein the vortex induced vibration device is joined to the pipeline section in step "d" with tensioned straps that define said tensile members.

21. The method of claim 18 wherein the vortex induced vibration device is joined to the pipeline section in step "d" with tensioned straps that define said tensile members.

22. The method of claim 19 wherein the vortex induced vibration device is joined to the pipeline section in step "d" with tensioned straps that define said tensile members.

23. The method of claim 14 wherein the vortex induced vibration device is joined to the pipeline section in step "d" with tensioned straps that define said tensile members.

24. The method of claim 13 further comprising the step

of adding copper nickel particulate to the strake.

25. The method of claim 14 further comprising the step of adding copper nickel particulate to the strake.